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TRANSMITTAL FORM

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ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
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- ☐ Amendment/Reply
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- ☑ Certified Copy of Priority Document(s)
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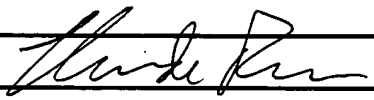
Signature			
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. PATENT APPLICATION NO.	:	10/726,480
FILING DATE	:	December 4, 2003
TITLE	:	METHOD AND SYSTEM FOR PROTECTION AGAINST UNAUTHORIZED DISTRIBUTION OF COPYRIGHTED COMPUTER FILES OVER PEER-TO-PEER NETWORKS
APPLICANT/OWNER	:	Claude FOURNIER
ATTORNEY DOCKET NO.	:	CF/001-US02

La Prairie, Québec, Canada
January 11, 2006

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SIR:

In order to perfect the claim for convention priority under 35 U.S.C. § 119 (a)-(d), we enclose herewith certified copies of the Canadian priority application No. 2,413,808 filed on December 5, 2003.

It is respectfully requested that the above-noted Canadian priority application be made of record in the present application.

Respectfully submitted,

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Enclosures

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La présente atteste que les documents ci-joints, dont la liste figure ci-dessous, sont des copies authentiques des documents déposés au Bureau des brevets.

This is to certify that the documents attached hereto and identified below are true copies of the documents on file in the Patent Office.

Specification and Drawings, as originally filed, with Application for Patent Serial No: **2,413,808,** on December 5, 2002, by **CLAUDE FOURNIER,** for "Method and System for Protection Against Unauthorized Distribution of Copyrighted Computer Files over Peer-to-Peer Networks".

Sylvie Grégoire
Agent certificateur/Certifying Officer

December 4, 2003
Date

Canada

(CIPO 68)
04-09-02

OPIC CIPO

ABSTRACT

A method and system for protection against unauthorized distribution of copyrighted computer files by end-users over a peer-to-peer (P2P) network make use of the viral aspect of P2P network by providing a computer server including corrupted version of the copyrighted computer files, by connecting the computer server to the P2P network, and by allowing access to such corrupted version. The versions of the copyrighted computer files are so corrupted as to allow their identification by peer end-users as being the corresponding copyrighted computer files.

TITLE OF THE INVENTION

METHOD AND SYSTEM FOR PROTECTION AGAINST UNAUTHORIZED DISTRIBUTION OF COPYRIGHTED COMPUTER FILES OVER PEER-TO-PEER NETWORKS

FIELD OF THE INVENTION

The present invention relates to peer-to-peer computer files' distribution networks. More specifically, the present invention is concerned with a method and system for protection against unauthorized distribution of copyrighted computer files over peer-to-peer networks.

BACKGROUND OF THE INVENTION

The popularity of personal computing among the general population continues to increase. Along with office automation applications and games, the Internet is largely responsible for the still-increasing popularity of personal computing. It is an understatement that the Internet has democratized access to information.

In a sense, Internet has always been about sharing: friends and relatives sharing words and moments using e-mails and instant messaging, information holders sharing their knowledge with others via web sites, companies sharing product information with potential clients and partners, etc. At first, the media was in the form of Bulletin Board System (BBS) and then it was in the form of Internet and Intranet networks. Today, even a computer game can be shared over the Internet.

It is therefore not surprising that among the most commonly used Internet applications are the so-called file-sharing applications. These applications allow a plurality of users to easily share computer files.

The increasing popularity of personal computing is also partially due to the democratization of the computer means for copying digital media files, including music and video files. This has caused headaches to owners of copyrighted media content that are seeing their profits from the sell of copyrighted material decreasing or at least peeking, since more and more people are equipped to copy copyrighted material owned by friends and relatives or obtained over the Internet.

Of course encryption techniques have been used since the beginning of the personal computer history to limit the copying of computer files. However, it seems that computer pirates, i.e. people getting unauthorized access to encrypted files, most of the time seem to succeed in overruling the encryption techniques.

Of course, there is always the opportunity for the owner of copyrighted material to use legal means to prevent people from infringing their rights. However, the popularity of peer-to-peer networks, which allow many users to share computer files without requiring a central server, has made the determination of possible infringers more difficult. In any case, it is often unpractical to sue end-users.

There is therefore a need for a system and method for protection against unauthorized distribution of copyrighted computer files over peer-to-peer networks.

SUMMARY OF THE INVENTION

More specifically, in accordance with the present invention, there is provided a method for protecting a copyrighted computer file against unauthorized distribution by end-users over a peer-to-peer (P2P) network, the method comprising:

providing a corrupted version of the copyrighted computer file on a computer server; the corrupted version sharing sufficient similarities with the copyrighted computer file so as to be identifiable by at least one of the end-users as the copyrighted computer file;

connecting the computer server to the peer-to-peer network; and

allowing access to the corrupted version over the peer-to-peer network;

whereby copying of the corrupted version by one of the end-users yields a new copy of the corrupted version which can be accessed through the peer-to-peer network by other end-users and which become identifiable as the copyrighted computer file, thereby decreasing the probability that one of the end-users access the copyrighted computer file, diminishing the reliability of the peer-to-peer network, and contributing to dissuading unauthorized distribution of the copyrighted computer file over the peer-to-peer network.

Other objects, advantages and features of the present invention will become more apparent upon reading the following non restrictive description of preferred embodiments thereof, given by way of example only with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the appended drawings:

Figure 1 is a block diagram illustrating a system for protection against unauthorized distribution of copyrighted computer files over peer-to-peer networks according to a first embodiment of the present invention;

Figure 2 is a flow chart illustrating a method for protection against unauthorized distribution of copyrighted computer files over peer-to-peer networks according to an embodiment of the present invention; and

Figure 3 is a block diagram illustrating a system for protection against unauthorized distribution of copyrighted computer files over peer-to-peer networks according to a second embodiment of the present invention.

DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

Turning to Figure 1 of the appended drawings, a system 10 for protection against unauthorized distribution of copyrighted computer files by end-users over a peer-to-peer (P2P) network according to a first embodiment of the present invention is illustrated.

The system 10 comprises a computer server 12 connected

to, and therefore part of, a peer-to-peer network 14. The peer-to-peer network 14 includes end-users 16 and may also include a host (not shown).

The term "end-user" (or peer) is to be construed herein as any computer or devices configured to be connected to a P2P network and for download and/or upload of computer files from and/or to other end-users.

Since peer-to-peer networks are believed to be well known in the art, they will not be described herein in more detail.

Of course, in addition to the conventional connection means that allow the computer server 12 to access the P2P network 14, the computer server 12 is configured with appropriate peer-to-peer network account information so as to allow access to the P2P network 14. Such account information allows other peers 16 connectivity to the computer server 12 and access to selected files stored therein.

The selected files on the computer server 12 include corrupted copies (not shown) of copyrighted computer files for which dissuasion of unauthorized distribution is expected.

Indeed, methods and systems according to the present invention aim at diminishing the reliability of a P2P network 14 to end-users 16 by adding "pollution" to the network 14. As will be explained hereinbelow in more detail, the corrupted version of the computer files can be seen as pollution in the P2P network since they are unwanted by the

end-users 16, useless to them and diminish the probability that end-user 16 find a specific file following a query over the P2P network. Such corrupted computer files contribute bringing uncertainty to end-users 16 as to the authentication of computer files downloaded from the end-users 16 part of the P2P network 14.

The corruption may take many forms, including: truncated files, file content not corresponding to the files attributes, lower quality files in case of multimedia files compare to the original files, partially incomplete files, and/or a file corresponding only partially to what its attributes may suggest. The corrupted version shares sufficient similarities with the copyrighted computer file so as to be identifiable by end-users as the copyrighted computer file.

It is to be noted that the term attribute should be construed as any information associated to a computer file that describes its content, including the name of the file, and that is used by end-users to identify a file. Since the concept of attribute is believed to be well known in the art, it will not be described herein in more detail.

A method 100 for protection against unauthorized distribution of copyrighted computer files by end-users over a peer-to-peer (P2P) network according to an embodiment of the present invention is illustrated in Figure 2 and is summarized as follows:

110 - providing a corrupted version of copyrighted computer files on a computer server;

112 - connecting the computer server to the peer-to-peer network; and

114 - allowing access to and transfer of the corrupted version over the peer-to-peer network.

To avoid any infringement of copyrighted material, the method and system according to the present invention should be preferably be used by the owner of copyrighted material, an authorized user or a licensee.

In a more specific example, the owner of songs may put corrupted version of those songs in a popular computer format such as MP3 or WAV. A file corresponding to a particular song may have a name corresponding to another song title, even from another artist. Alternatively or additionally, glitches may be added to the song before or after digitalisation and/or compression. Also, a song may be more compressed than what its attributes may suggest, therefore yielding a song with lesser audio quality.

Of course the nature of the corruption may vary. Alternatively many corruption schemes may be used for a single file. For example, a computer file having a name corresponding to a certain song title may correspond to another song, this other song may include glitches and may be abruptly interrupted.

The system and method according to the present invention takes advantages of the viral properties of P2P file sharing. Indeed, a single server connected to a P2P network may be accessed by a single

user or a plurality of different user, each getting access to corrupted files and creating copy of those corrupted files on their computer system. These corrupted copies will, in turn, be accessed and copied by other peers according to the well-known P2P files distribution scheme.

Each further copy of the corrupted file decreases the probability that one of the end-users accesses the copyrighted computer file, diminishes the reliability of the peer-to-peer network, and contributes to dissuading unauthorized distribution of the copyrighted computer file over the peer-to-peer network.

Of course, the owner of copyrighted material may register itself on more than one P2P network and/or may advantageously allow other authorized peers to distribute corrupted files, increasing the distribution speed of the corrupted files. It should not be long before a targeted P2P network being polluted with corrupted files. This should results in frustration to the end-user, that may then prefer to seek other files or to obtain copyrighted files through other file distribution technique that are either legal or at least more easy to identify for the copyright owner.

Turning now to Figure 3, a system 18 for protection against unauthorized distribution of copyrighted computer files by end-users over a peer-to-peer (P2P) network, according to a second embodiment of the present invention is illustrated.

Since the system18 is very similar to the system 10, only the major differences between the two systems will be described herein in

further detail.

The system 18 comprises a second computer server 20 that is also configured so as to be part of the peer-to-peer network 14'. The server 20 is so located as to be remotely distanced geographically from the first computer server 12 so as to increase the distance between the two network nodes constituted by the two servers 12 and 20.

The second server 20 is configured to query the P2P network for copyrighted files covered by the system 18 and to monitor the occurrences of such copyrighted files among, hopefully, corrupted version of such copyrighted files. Such monitoring may allow assessing the effectiveness of the system 18. In case where the probability of accessing copyrighted computer files covered by the system 18 over corrupted version of such files exceeding a predetermined threshold, access to more corrupted copies of the copyrighted material may be allowed by the servers 12 and/or 20 or another computer server configured similarly to the server 12 (not shown).

According to another embodiment, the corrupted version of copyrighted files may include identification means allowing easy recognition of such corrupted files by the second server 20.

Of course, the number of computer servers 12 and 20 may vary without departing from the spirit and nature of the present invention.

It is to be noted that the computer server 10 and 12 may take many forms, including a personal computer.

The system and method according to the present invention is advantageous since it allows an easy and relatively inexpensive way to dissuade end-users in a peer-to-peer network from trying to get unauthorized access to copyrighted files.

Although, the method and system according to the present invention has been described by way of reference mainly to sound files, it can also be used with computer application files, text files, video files, pictures, etc. In each case, the nature of corruption may vary from, for example, associating a computer file with a non-corresponding file name to adding data errors in the files.

Although the present invention has been described hereinabove by way of illustrative embodiments thereof, it can be modified without departing from the spirit and nature of the subject invention, as defined in the appended claims.

CLAIMS:

1. A method for protecting a copyrighted computer file against unauthorized distribution by end-users over a peer-to-peer (P2P) network, said method comprising:

providing a corrupted version of the copyrighted computer file on a computer server; said corrupted version sharing sufficient similarities with said copyrighted computer file so as to be identifiable by at least one of the end-users as the copyrighted computer file;

connecting said computer server to the peer-to-peer network; and

allowing access to said corrupted version over said peer-to-peer network;

whereby copying of said corrupted version by one of the end-users yields a new copy of said corrupted version which can be accessed through said peer-to-peer network by other end-users and which become identifiable as the copyrighted computer file, thereby decreasing the probability that one of the end-users access the copyrighted computer file, diminishing the reliability of the peer-to-peer network, and contributing to dissuading unauthorized distribution of the copyrighted computer file over the peer-to-peer network.

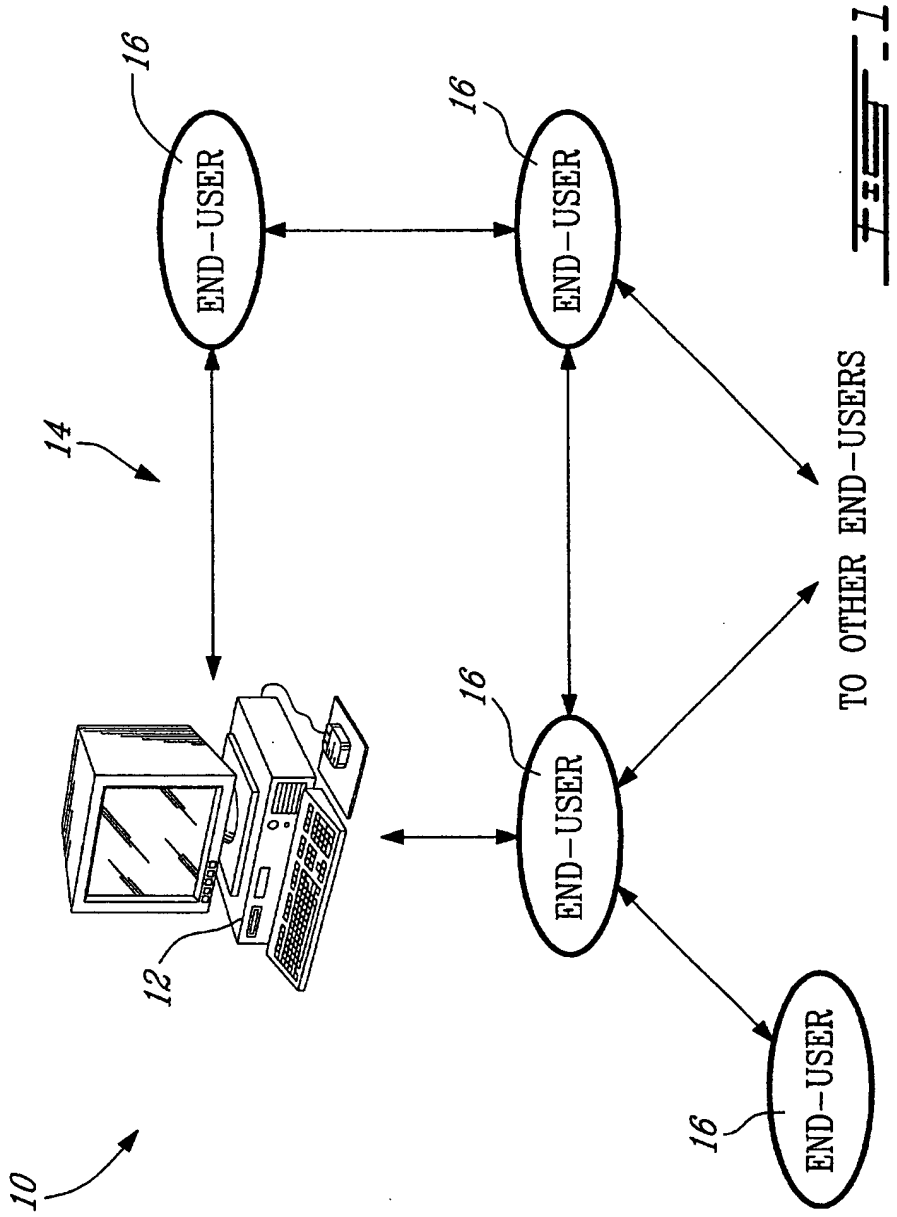
10
12
14
16
END-USER
16
END-USER
16
END-USER
16
END-USER
TO OTHER END-USERS

FIG. 1

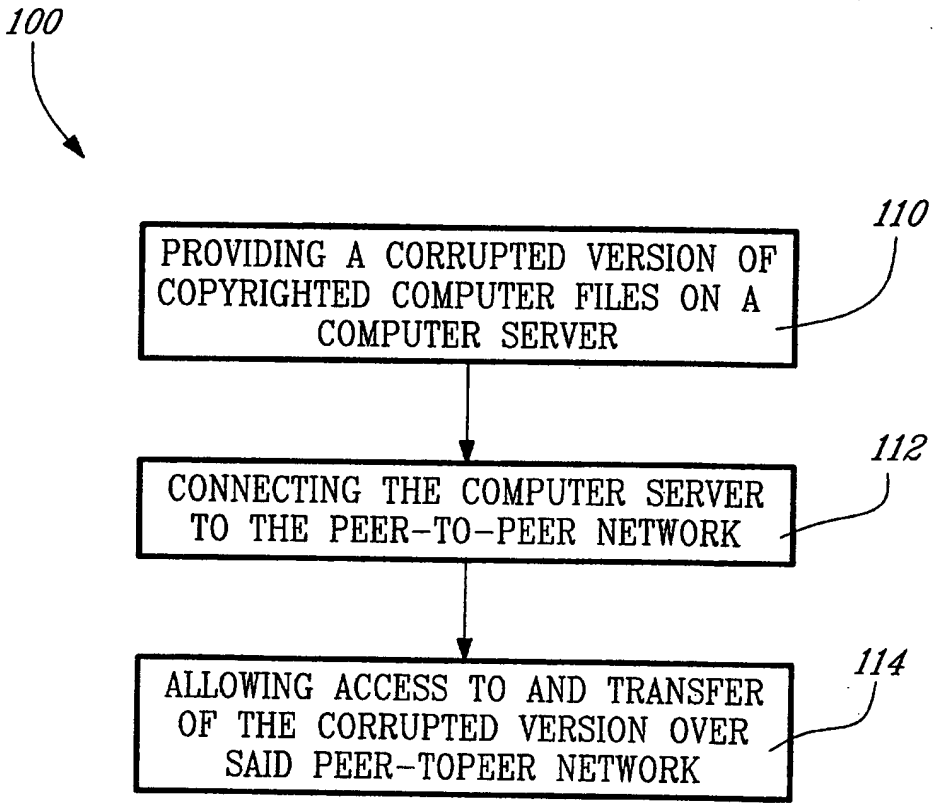
100
PROVIDING A CORRUPTED VERSION OF COPYRIGHTED COMPUTER FILES ON A COMPUTER SERVER
110
CONNECTING THE COMPUTER SERVER TO THE PEER-TO-PEER NETWORK
112
ALLOWING ACCESS TO AND TRANSFER OF THE CORRUPTED VERSION OVER SAID PEER-TOPEER NETWORK
114

Fig. 2

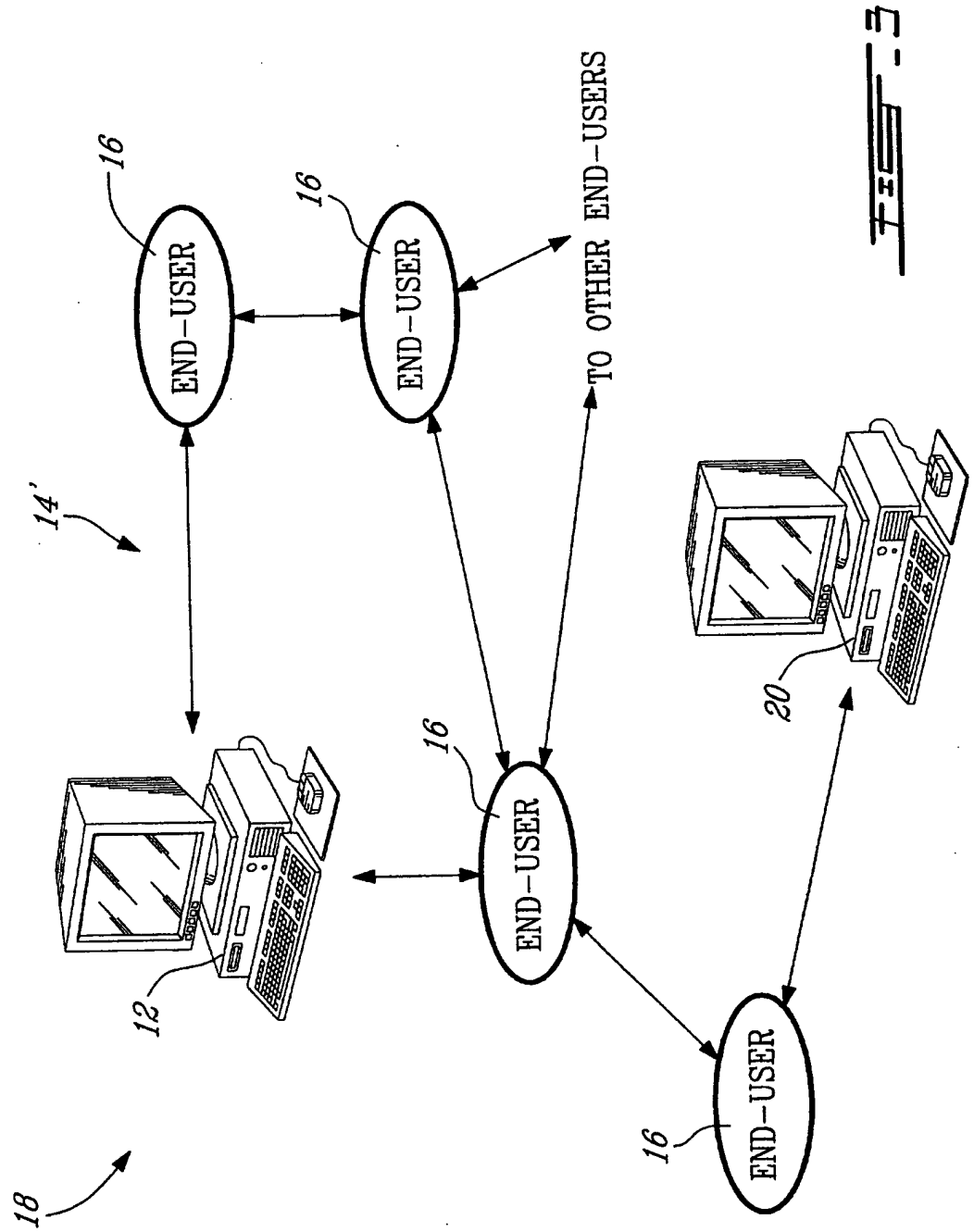
END-USER
END-USER
END-USER
END-USER
TO OTHER END-USERS
16
16
16
16
14'
12
20
18

FIG. 3